IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

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| Applicants: | D.A.L. Wallace et al. | Attorney Docket No.: | SPCI115495 |
| Application No.: | 09/842366 | Art Unit: 2155 / Confirmation No.: | 6571 |
| Filed: | April 24, 2001 | Examiner: | A.M. Nawaz |
| Title: | METHOD, SYSTEM, AND APPARATUS FOR PROVIDING DATA REGARDING THE OPERATION AND MONITORING OF A CONTROL SYSTEM | | |

# APPELLANTS' APPEAL BRIEF

Seattle, Washington

November 18, 2009

TO THE COMMISSIONER FOR PATENTS:

This Appeal Brief is filed in support of the Notice of Appeal filed on June 19, 2009, appealing the Examiner's final rejection, dated January 22, 2009. Pending Claims 1–9, 12–15, 17, 18, 27, 28, 31, and 33–37 were rejected under 35 U.S.C. § 103(a) as being obvious over U.S. Patent No. 6,282,454, to Papadopoulos et al. (hereinafter "Papadopoulos"), in view of U.S. Patent No. 6,401,131, to Haverstock et al. (hereinafter "Haverstock"). Claims 10, 11, and 16 were rejected under 35 U.S.C. § 103(a) as being obvious in view of Papadopoulos, Haverstock, and in further view of U.S. Patent No. 6,453,687, to Sharood et al. (hereinafter "Sharood"). Moreover, the Office Action rejected Claims 1–18, 27, 28, 31, and 33–37 under 35 U.S.C. § 112 as being indefinite.

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## I. REAL PARTY IN INTEREST

The real party in interest is Spectrum Controls, Inc., 2700 Richards Road, Bellevue, Washington.

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## II. RELATED APPEALS AND INTERFERENCES

Appellants are not aware of any prior or pending appeals, judicial proceedings, or interferences that may be related to, directly affect or be affected by, or have a bearing on the decision of the Board of Appeals and Interferences (hereinafter the "Board") in the pending appeal.

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## III. STATUS OF CLAIMS

Claims 1–9, 12–15, 17, 18, 27, 28, 31, and 33–37 are rejected and on appeal.



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## IV. STATUS OF AMENDMENTS

Upon information and belief, there are no outstanding amendments filed subsequent to the final Office Action of January 22, 2009.

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## V. SUMMARY OF CLAIMED SUBJECT MATTER

In the summary below, the page and line numbers correspond to the page and line numbers of the application as filed. However, the references to the detailed description made herein are merely provided as an aid in understanding of the claimed subject matter. Accordingly, the locations referenced in the detailed description are merely exemplary embodiments of the disclosed subject matter and should not be construed as limiting.

With regard to Claim 1, a system that provides information regarding the operation of a control system is disclosed. (See, for example, the embodiments disclosed in, but not limited to, FIGURES 1A-B, FIGURE 2, FIGURE 3, FIGURE 4, FIGURE 5, FIGURE 13; page 10, lines 11–33; page 12, line 30, to page 13, line 11; page 21, lines 29–34; page 22, lines 12–22.) The system includes a Web server module associated with said control system, said Web server module having a memory operative to store a non-markup language Web site database that may be used to dynamically generate a markup language Web page in response to a request (see, for example, the embodiments disclosed in, but not limited to, FIGURE 3, FIGURE 4, FIGURE 5; page 13, lines 12–18; page 13, line 31, to page 14, line 4), wherein said Web site page is populated by the Web server module with information obtained directly from memory registers of the control system in response to the request. (See, for example, the embodiments disclosed in, but not limited to, FIGURE 2, FIGURE 3, FIGURE 26; page 30, line 22, to page 31, line 7; page 31, lines 15–24.) A remote computer is included in the system that is operative to receive user-defined non-markup language configuration data defining attributes of said Web site, to store said configuration data as said non-markup language Web site database, to transmit said non-markup language Web site database to said Web server module, and to request and receive said markup language Web page from said Web server module. (See, for example, the embodiments disclosed in, but not limited to, FIGURES 1A-B, FIGURE 2, FIGURE 12,

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FIGURE 13, FIGURE 14, FIGURE 15; page 9, lines 17-23; page 21 lines 15-19; page 23, lines 12-22, page 23, line 31, to page 24, line 21; page 24, lines 30-32; page 33, lines 8-32.) A Web server module configuration application associated with the remote computer is operative to create said non-markup language Web site database from information obtained locally at the remote computer and to transmit said database to said Web server module in response to the request. (See, for example, the embodiments disclosed in, but not limited to, FIGURES 1A-B, FIGURE 2, FIGURE 7, FIGURE 17, FIGURE 23, FIGURE 24, FIGURE 28, FIGURE 29, FIGURE 30, FIGURE 31, FIGURE 32; page 7, lines 23–29; page 9, lines 24–29; page 12, lines 18–29; page 17, lines 1–9; page 25, line 21, to page 30, line 11; page 32, lines 5–15; page 32, line 28, to page 33, line 32.) Moreover, the Web server module in the system is further configured to receive the non-markup language database from the remote computer in a request and to dynamically generate a markup language Web page that includes information obtained directly from memory registers of the control system in response to said request without data related to said markup language Web page persisting on said Web server module. (See, for example, the embodiments disclosed in, but not limited to, FIGURES 1A-B, FIGURE 2, FIGURE 5, FIGURE 6, FIGURE 7, FIGURE 8, FIGURE 9, FIGURE 10, FIGURE 17, FIGURE 27; page 7, lines 31–35; page 15, lines 14–18; page 15, line 29, to page 16, line 2; page 16, lines 18–34; page 17, lines 10–31; page 18, lines 2–10; page 18, line 33, to page 19, line 12; page 19, lines 21–30; page 25, line 21, to page 30, line 11; page 31, lines 15–24.)

With regard to Claim 27, a method of providing information regarding the operation of a control system is disclosed. (See, for example, the embodiments disclosed in, but not limited to, FIGURES 1A-B, FIGURE 2, FIGURE 13; page 10, lines 11–33; page 12, line 30, to page 13, line 11; page 21, lines 29–34; page 22, lines 12–22.) The method receives user-defined non-markup language configuration data defining attributes of a Web site wherein the Web site



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corresponds to aspects of a programmable logic controller defined by a user wherein said configuration data defines a table with entries corresponding to the contents of read or write memory registers contained within said control system (see, for example, the embodiments disclosed in, but not limited to, FIGURE 3, FIGURE 5, FIGURE 6, FIGURE 7, FIGURE 9, FIGURE 10, FIGURE 12, FIGURE 14, FIGURE 15, FIGURE 26, FIGURE 28; page 12, lines 18–29; page 15, line 29, to page 16, line 2; page 16, lines 18–34; page 17, lines 1–9; page 18, lines 13–16; page 19, lines 6–12 and 21–30; page 21, lines 15–19; page 23, lines 12–22; page 23, line 31, to page 24, lines 21; page 24, lines 30–32; page 31, lines 15–24; page 32, lines 5–15; page 32, line 28, to page 33, line 32), wherein said data defining said table is created by receiving a mapping of a text tag to said memory register and by receiving a selection of said tag and a request that said tag be displayed in said table. (See, for example, the embodiments disclosed in, but not limited to, FIGURE 30, FIGURE 31, FIGURE 32; page 33, lines 8–32.) The method stores said configuration data as a non-markup language Web site database. (See, for example, the embodiments disclosed in, but not limited to, FIGURES 1A–B, FIGURE 2, FIGURE 5; page 7, lines 23–29; page 9, lines 24–29; page 15, lines 14–18.) In response to a request, the method dynamically generates a Web page defined by the non-markup language configuration data stored as a non-markup language Web site database that provides information regarding the operation of a control system (see, for example, the embodiments disclosed in, but not limited to, FIGURES 1A-B, FIGURE 2, FIGURE 4, FIGURE 5, FIGURE 17, FIGURE 18, FIGURE 19, FIGURE 20, FIGURE 21, FIGURE 22, FIGURE 23; page 7, lines 23–29; page 9, lines 24–29; page 13, lines 12–18; page 15, lines 14–18; page 25, line 21, to page 30, line 11), wherein said markup language Web page is generated dynamically without persisting on a Web server. (See, for example, the embodiments disclosed in, but not limited to, FIGURES 1A-B, FIGURE 2, FIGURE 5, FIGURE 6, FIGURE 7, FIGURE 8, FIGURE 9, FIGURE 10,

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FIGURE 17, FIGURE 27; page 7, lines 31–35; page 13, line 31, to page 14, line 4; page 17, lines 10–31; page 18 lines 2–10; page 18, line 33, to page 19, line 5; page 25, line 21, to page 30, line 11; page 30, line 22, to page 31, line 7.)

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## VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

The grounds presented for appeal are as follows:

Ground 1: Whether Claims 1–9, 12–15, 17, 18, 27, 28, 31, and 33–37 are obvious under 35 U.S.C. § 103(a) in view of Papadopoulos and Haverstock.

Ground 2: Whether Claims 10, 11, and 16 are obvious under 35 U.S.C. § 103(a) in view of Papadopoulos, Haverstock, and Sharood.

Ground 3: Whether Claims 1–9, 12–15, 17, 18, 27, 28, 31, and 33–37 satisfy the written description requirement of 35 U.S.C. § 112.

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## VII. ARGUMENT

In *KSR International Co. v. Teleflex Inc.*, 550 U.S. __, 82 U.S.P.Q.2d 1385, 1395-97 (2007), the Supreme Court instructed that a claim rejection under 35 U.S.C. § 103 must include a clear articulation of the reason(s) why the claimed invention would have been obvious in view of the prior art. See also M.P.E.P. § 2143 and *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006) ("Rejections on obviousness ground cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness"). Further, "[w]hen evaluating claims for obviousness under 35 U.S.C. § 103, all the limitations of the claims must be considered and given weight." See *Ex parte Grasselli*, 231 U.S.P.Q. 393 (Bd. App. 1983), *aff'd mem.*, 738 F.2d 453 (Fed. Cir. 1984). See also M.P.E.P. § 2143.01(II). In addition, it is well established that a *prima facie* case of obviousness is only shown if the cited references, alone or in combination, teach or suggest each and every element recited in the claim. *In re Bell*, 991 F.2d 781 (Fed. Cir. 1993).

Appellants respectfully submit that the Office Action fails to provide a clear articulation of the reasons why the claimed invention is legally obvious in view of the cited references. Appellants further submit that the Examiner has failed to correctly identify the scope and content of the prior art and to properly assess the difference between the references and the claimed invention. The reasons for the above assertions are set forth below.



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Ground 1: Whether Claims 1–9, 12–15, 17, 18, 27, 28, 31, and 33–37 are unpatentable under 35 U.S.C. § 103(a) in view of Papadopoulos and Haverstock

1. Summary of Cited References

Papadopoulos et al. (U.S. Patent No. 6,282,454)

Papadopoulos is purportedly directed to a Web interface for a programmable controller. The stated goal of Papadopoulos is "to develop an automation control system whereby a user could use general, commercial networks such as the Internet in place of specialized industrial networks to remotely monitor automation control devices such as PLCs." (Papadopoulos, Col. 2, lines 25–30.) Papadopoulos purportedly describes the ability for a user to obtain snapshots of the status of a control system from a remote location via seven predefined Web pages.

Haverstock et al. (U.S. Patent No. 6,401,131)

Haverstock is purportedly directed to an enhancement to a Web server that enables attachment of HTML and non-HTML files to Web pages. In this regard, Haverstock describes a tool that allows users to identify both HTML and non-HTML documents in a networking environment using a Web browser. For example, a Web browser may be used to identify data items maintained in non-HTML databases (i.e., Lotus Notes). In instances when a user generates a request to access a non-HTML data item, the Haverstock system translates the non-HTML data into a format supported by a Web browser. In this instance, one or more of the data items may be "attached" to a Web page for transmission to the client computing device.

2. Independent Claims 1 and 27 are allowable over Papadopoulos in view of Haverstock.

Claims 1 and 27 were rejected under 35 U.S.C. § 103(a) as being obvious in view of Papadopoulos and Haverstock. As set forth in further detail below, each of these claims is allowable over this cited art for at least the following reasons.

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A. Independent Claim 1

Claim 1 recites the following:

> 1. A system for providing information regarding the operation of a control system, comprising:
>
> a Web server module associated with said control system, said Web server module having a memory operative to store a non-markup language Web site database that may be used to dynamically generate a markup language Web page in response to a request, wherein said Web site page is populated by the Web server module with information obtained directly from memory registers of the control system in response to the request;
>
> a remote computer operative to receive user-defined non-markup language configuration data defining attributes of said Web site, to store said configuration data as said non-markup language Web site database, to transmit said non-markup language Web site database to said Web server module, and to request and receive said markup language Web page from said Web server module;
>
> a Web server module configuration application associated with the remote computer operative to create said non-markup language Web site database from information obtained locally at the remote computer and to transmit said database to said Web server module in response to the request; and
>
> wherein the Web server module is further configured to receive the non-markup language database from the remote computer in a request and to dynamically generate a markup language Web page that includes information obtained directly from memory registers of the control system in response to said request without data related to said markup language Web page persisting on said Web server module.



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i. Papadopoulos fails to teach or suggest the claim elements of "a remote computer operative to receive user-defined non-markup language configuration data defining attributes of said Web site, to store said configuration data as said non-markup language Web site database, to transmit said non-markup language Web site database to said Web server module . . . ."

Claim 1 recites a system that provides information regarding the operation of a control system having claim elements that include: "a remote computer operative to receive user-defined non-markup language configuration data defining attributes of said Web site, to store said configuration data as said non-markup language Web site database . . . to transmit said non-markup language Web site database to said Web server module . . . ." A system having a computer remote from a Web server that utilizes "a non-markup language" to define a Web site is provided. In this regard, the specification of the present application clearly indicates that the user may input the non-markup language data using menus and interfaces available from the computer that is remote from the Web server module. See present application at page 7, lines 25–30. Accordingly, a user does not have to provide or modify markup language data to generate Web pages related to the control system.

The Office Action alleges that Papadopoulos teaches a system having a "computer operative to receive user defined non-markup language configuration data defining said website . . . ." See Office Action at pages 3–4. A careful review of Papadopoulos fails to reveal anything in the way of "a remote computer operative to receive user-defined non-markup language configuration data" let alone a remote computer operative to "receive user-defined non-markup language configuration data;" "store said configuration data as said non-markup language Web site database;" and "to transmit said non-markup language Web site database to said Web server module." In this regard, the Office Action appears to cite Col. 3, lines 48–60, and Col. 4, lines 1–35 of Papadopoulos as teaching these claim elements. In their entirety, the cited sections of Papadopoulos state the following:

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The web site 4 includes a network interface 16 having an unique Internet address 18, a server 20, and an application program 22. The server 20 acts as the HTTP interpreter which uses TCP in conjunction with IP, through TCP/IP stack 24 to interact with the network interface 16 and the application program 22. This enables the data transfer between the application program 22 and the user 2 through the Internet 14. The application program provides data from the process control system 6. This data can be used to monitor the control process by the user 2 at the remote location. The TCP/IP stack 24 enables data transfers over the Internet 14 between the user 2 and the web site 4 as required for the various layers specified by the IP protocol.

* * *

The browser 10 will send commands to the Web site 4 which will use the application program 22 to display whatever information is available from the process control system 6. The browser 10 functions as a remote human-machine interface or HMI control of the process control system as will be detailed below.

FIG. 2 shows a basic block diagram of the present invention illustrating the Internet interface to a programmable logic controller system. The web site 4 includes the network interface 16 having an unique Internet address 18 and a web server 30. The web server 30 provides the home page for the website. A firewall or security for the overall system can be included in the Web server 30, but is generally maintained as part of the network interface 16. In addition to providing security for various pages at the site, the user can disable the web server 30. A password and user list is provided in initial configuration files stored in the web server 30 that are downloaded from a remote server. Protection of the configuration file is then provided by the remote server and the web server 30 through the password and the user list. The web server 30 provides a direct connection for a programmable logic controller (PLC) 32 to the Internet 14 by plugging the web server 30 into its back plane 34. The web server 30 provides both a client and server interface. All signals between the PLC 32 and the web server 30 are through the back plane 34 rather than over a set of cables which would normally have to be coupled to input/output modules that are themselves plugged into the back plane 34. The back plane signals include addressing, control, data, and power. The client interface allows a user to send commands to a remote node over the Internet and the server interface allows for processing commands that originated from a remote node. Controlling the PLC 32 from a remote



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> HMI, essentially on a real time basis is possible by controlling the data flow through the web server 30.

The cited sections of Papadopoulos provided above describe that the web site 4 includes the network interface 16 having a unique Internet address 18 and a web server 30, which provides the home page for the website. The cited sections and the reference taken as a whole do not support the assertion that the reference discloses a non-markup language for defining a Web site. In contrast, it is consistent with the rest of the disclosure of Papadopoulos that describes the use and implementation of predefined web pages, i.e., conventional markup language web pages. The cited section of Papadopoulos does indicate that "[a] password and user list is provided in initial configuration files stored in the Web server 30 that are downloaded from a remote server. Protection of the configuration file is then provided by the remote server and the Web server 30 through the password and the user list." See Papadopoulos at Col. 4, lines 16–21. It is not clear from the Office Action whether this aspect of Papadopoulos is alleged to read on the element in Claim 1 in which the remote computer is configured to "receive user-defined non-markup language configuration data . . . ." In any event, appellants note that the Web server in Papadopoulos may be configured to receive information that describes the security attributes for authenticating users (although the format of the received security data is not explicitly stated). In contrast to the elements of Claim 1, the "remote computer" in Papadopoulos does not "receive user-defined non-markup language configuration data . . ." or "store said configuration data as said non-markup language Web site database . . . ." Instead, the Web server in Papadopoulos stores the markup language (e.g., HTML) documents that are used to handle received HTTP requests. See Papadopoulos at Col. 9, lines 56–67; Col. 3, lines 60–67; Col. 11, lines 1–4; Col. 12, lines 21-26. However, "because of the small physical size requirements for a rack-mounted Web server module and the high price of non-volatile memory," a different approach is taken by the present invention. See present application at page 3. In particular, an improved

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Web server system is recited in Claim 1 that requires less non-volatile storage than conventional Web servers which store traditional markup language Web pages. By configuring the system with a remote computer operative to "receive user-defined non-markup language configuration data;" "store said configuration data as said non-markup language Web site database;" and "transmit said non-markup language Web site database to said Web server module," a Web Server having a small form factor and non-volatile memory requirements is provided. For example, the specification of the present application states:

> Firmware for controlling the operation of the Web server module 22 as well as the Web server application itself reside in flash memory 82. According to the actual embodiment of the invention described herein, 4 512 K x 16 flash integrated circuits are used to obtain the quantity of code space required. The architecture arranges the flash as two individual banks, of 512 K x 32 each. A RAM memory 84 is also provided for general use. According to the embodiment of the present invention described herein, 2 4M x 16 synchronous DRAMs provide the general use RAM memory. These devices sit on the system bus and are configured as a 4 M x 32 wide SDRAM memory space.

[See present application at page 13, line 31, to page 14, line 4.]

By configuring the components of the system as recited in Claim 1, the specified amount of "flash memory" can be used to provide the non-volatile memory requirements of the Web server module. Those skilled in the art and others with recognize that conventional hard drives are typically used by Web servers for non-volatile storage of the markup language (e.g., HTML) documents. The elements recited in Claim 1 above improve upon these conventional systems in a way that is not disclosed in the cited references.

> ii. Papadopoulos fails to teach or suggest the claim elements of "wherein the Web server module is further configured to receive the non-markup language database from the remote computer in a request and to dynamically generate a markup language Web page that includes information obtained directly from memory registers of the control system

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in response to said request without data related to said markup language Web page persisting on said Web server module . . . ."

Appellants submit that Papadopoulos fails to disclose, teach, or suggest the above elements in Claim 1. In this regard, the Office Action asserts that the same portion of Papadopoulos provided above (namely Col. 3, lines 48–60, and Col. 4, lines 1–35) discloses these claim elements. However, the broadest reasonable interpretation of this portion of Papadopoulos and the reference as a whole reveals that the references does not teach or suggest the recited claim elements.

In contrast to elements in Claim 1, Papadopoulos describes the use of conventional static Web pages that may provide snapshots of PLC data. In Papadopoulos, the Web pages that are rendered to display the PLC data are described as seven predefined Web pages: "The home page contains hyperlinks to seven pages of data. . . . The data appearing on the pages is static but can be automatically updated at preselected times." Papadopoulos, at Col. 8, line 62 to Col. 9, line 16. Even assuming that Papadopoulos discloses dynamically generating Web pages, at least some markup language data related to said Web page persists to the Web Server. In this regard, those skilled in the art and others will recognize that persisting data to memory involves committing data to a non-volatile memory device. Papadopoulos clearly discloses a Web server module in which predefined Web pages are persisted to the memory of the Web server. Those skilled in the art and others will recognize that the amount of data required to service HTTP requests can grow very rapidly to accommodate different devices and functionalities. As described above, a minimal amount of flash memory may be used to provide the non-volatile memory requirements of a small form factor Web server module provided by the present invention. However, Papadopoulos indicates that HTML documents and associated hypertext links are persisted to the Web Server. In contrast, Claim 1 recites, a "Web server module that is configured to receive the non-markup language database from the remote computer and to



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dynamically generate a markup language Web page . . . without data related to the markup language Web page persisting on said Web server module." As a result, the present invention may utilize a Web server module that requires few resources (i.e., non-volatile memory) when compared to the cited references.

> iii. Haverstock fails to teach or suggest the claim elements of "a Web server module configuration application associated with the remote computer operative to create said non-markup language Web site database from information obtained locally at the remote computer . . ." which "defines attributes of said Web site."

The Office Action indicates that Papadopoulos "does not explicitly indicate that the data defines attributes of said Web site." See Office Action at page 4, lines 10-11. This assertion is not consistent with an earlier assertion in the Office Action that Papadopoulos teaches a computer "operative to receive user defined non-markup language configuration data defining said website," as indicated above. See Office Action at page 3, line 15, to page 4, line 5. In any event, the Office Action then asserts that Haverstock discloses "a web server module configuration application operative to create said non-markup language Web site database and to transmit said database to said web server module in response to the request." See Office Action at page 4, lines 12–13. In this regard, the Office Action asserts that Haverstock at Col. 10, lines 27–60 discloses this claim element. In its entirety, this section of Haverstock states the following:

> 1. A server system enabling a server to attach one or more non-markup language objects to one or more markup language objects, the system comprising:
>
> a server capable of receiving a request for one or more non-markup language objects from a markup language enabled browser;
>
> one or more databases, in communication with the server, storing the one or more non-markup language objects; and



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an attachment module, provided at the server, that enables the one or more non-markup language objects to be attached to one or more first markup language objects, the one or more first markup language objects being web pages posted on a web site, wherein:

(i) the server retrieves the one or more non-markup language objects;

(ii) the attachment module attaches the one or more non-markup language objects to the one or more first markup language objects by storing the one or more non-markup language objects as at least a portion of the one or more first markup language objects without changing a format of the one or more non-markup language objects, thereby creating at least one second markup language object and wherein selection of a link opens the one or more non-markup language object in the format and the one or more non-markup language objects are retrieved with the one or more first markup language objects; and

(iii) the server transmits the at least one second markup language object to the browser.

2. The system of claim 1, further comprising a determining module that determines the format of the one or more non-markup language objects.

Appellants agree that Papadopoulos fails to teach or suggest the claim elements recited above. However, appellants respectfully submit that Haverstock fails to remedy the deficiencies related to the teachings of Papadopoulos. The cited sections of Haverstock are purportedly directed to an enhancement to a Web server that enables attachment of non-HTML objects to Web pages. In this regard, users may identify both HTML and non-HTML objects from a Web browser. Through the interface provided by the Web browser, a user may identify data items maintained in non-HTML databases (i.e., Lotus Notes). When a user generates a request to access a non-HTML object, the Haverstock system purportedly allows the non-HTML data to be accessed within the environment of the Web browser. To facilitate access by the user, the non-HTML data items may be "attached" to a Web page for transmission to the client computing device. Appellants submit that the Haverstock disclosure of a Web server configured to attach



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one or more non-markup language objects to a markup language object is not equivalent to the elements recited in Claim 1. In this regard, Claim 1 provides a system in which a user may define *attributes of a Web site* using "a Web server module configuration application" that receives "non-markup language configuration data." The Web site database that is created using the Web server configuration application includes the non-markup language configuration data which describes *attributes of that Web site*. FIGURES 28–34 and the corresponding description in the present application provide several examples of the ways in which attributes of a Web site may be defined. For example, using the Web server configuration application, a non-markup language may be utilized to add pages, subtract pages, or modify pages of the Web site that is accessed from the Web server module. See present application, page 32, lines 28–35. Haverstock's disclosure of a Web server configured to attach one or more non-markup language objects does not disclose, and is not equivalent to, a Web server configuration application as claimed.

In one aspect, Haverstock describes using a "template file" to create Web pages. In this regard, the Office Action states:

> Haverstock et al. teaches a system and method for viewing production information and generating web pages in which a web server opens a template file related to the requested web page, creates hyperlinks and other information content by executing database references embedded within the template file to generate a markup language page and a web server module configuration application operative to create said non-markup language web site database . . . .

[Office Action at page 4, lines 10–15.]

The disclosure of templates in Haverstock is not equivalent to a Web server configuration application as claimed. Those skilled in the art and others will recognize that a template file serves as a starting point for a new document. As such, templates are typically pre-formatted in a specified way to prevent users from having to implement the same formatting each time a new



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document is created. This functionality of "templates" is confirmed in the specification of Haverstock which states:

> The system user may then retrieve a form which serves as a template for creating an electronic mail message (e-mail). The e-mail is composed in cooperation with the scheduling application and therefore identifies information concerning the event (e.g., date, time, location, etc.). The system user addresses the e-mail to the invitees using electronic mail addresses stored in a user directory. The user directory may include additional information (e.g., user role, profile, etc.).

[Haverstock at Col. 7, lines 59–67.]

Appellants respectfully submit that the template creation system taught in Haverstock is utilized to provide a baseline for creating new documents. Accordingly, this use of templates does not provide a Web server module configuration application as recited in Claim 1. Indeed, there is no discussion in either Haverstock or Papadopoulos of using a non-markup language or "a Web server module configuration application" that allows a user to customize the attributes of a Web site.

In summary, and as noted above, the Supreme Court in *KSR* has specifically instructed that a 35 U.S.C. § 103(a) rejection requires a clear articulation of the reasons why the claimed invention would have been obvious. "When evaluating claims for obviousness under 35 U.S.C. § 103(a), ***all*** the limitations of the claims must be considered and given weight." See *Ex parte Grasselli*, 231 U.S.P.Q. 393 (Bd. App. 1983), *aff'd mem.*, 738 F.2d 453 (Fed. Cir. 1984). (Emphasis added.) See also M.P.E.P. § 2143.01(II). In light of the above, appellants submit that Papadopoulos or Haverstock, alone or in combination, fail to disclose or suggest each element of Claim 1. Accordingly, a proper *prima facie* case of obviousness has not been made. Appellants submit that the Board should overturn the 35 U.S.C. § 103(a) rejection of Claim 1.

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B. Independent Claim 27

i. Papadopoulos and Haverstock fail to teach or suggest elements of Claim 27

Claim 27 recites a method that was rejected in the Office Action on the same basis as the system recited in Claim 1. In this regard, independent Claim 27 recites:

> receiving user-defined non-markup language configuration data defining attributes of a Web site ... storing said configuration data as a non-markup language Web site database; and in response to a request, dynamically generating a Web page defined by the non-markup language configuration data stored as a non-markup language Web site database that provides information regarding the operation of a control system, wherein said markup language Web page is generated dynamically without persisting on a Web server.

These elements in Claim 27 are substantially similar to corresponding elements in Claim 1. Because the subject matter of these features as recited in Claim 27 is not taught or suggested by the reference as described above in regard to Claim 1, these features of Claim 27 are likewise not taught or suggested by Papadopoulos and Haverstock, alone or in combination.

ii. Papadopoulos fails to teach or suggest mapping of text tag to memory registers

Claim 27 recites subject matter that is **not** recited in Claim 1. In this regard, Claim 27 recites a method "... wherein said configuration data defines a table with entries corresponding to the contents of read or write memory registers contained within said control system, wherein said data defining said table is created by receiving a mapping of a text tag to said memory register and by receiving a selection of said tag and a request that said tag be displayed in said table." The Office action alleges that Papadopoulos discloses the aforementioned elements of Claim 27 and cites Papadopoulos at Col 2, lines 41–63; Col. 6, lines 35–45, and Table 1 in support of that proposition. In their entirety, the cited section of Papadopoulos state the following:

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> In the preferred embodiment of the invention, the invention allows for easy access over a commercial network such as Internet to information within a programmable logic controller (PLC). Access can be made locally or worldwide using a commercial Web browser. The invention is comprised of a control system of essential elements including, but not limited to a Web interface, a local network, and a network interface to at least one PLC control system running an application program for controlling output devices in response to status of input devices. The Web interface runs Web pages from an Ethernet board coupled directly to the PLC back plane and includes an HTTP protocol interpreter, a PLC back plane driver, a TCP/IP stack, and an Ethernet board kernel. The Web interface provides access to the PLC back plane by a user at a remote location through the Internet. The interface translates the industry standard Ethernet, TCP/IP and HTTP protocols used on the Internet into data recognizable to the PLC. Using this interface, the user can retrieve all pertinent data regarding the operation of the PLC, including PLC configuration, I/O and register status, operating statistics, diagnostics, and distributed I/O configurations. Updates to operating software can also be downloaded through the Internet access.
>
> * * *
>
> The request for accessing the PLC's 32 registers is processed by the back plane driver 56, and is not sent to the PLC's executive program for processing. The back plane driver 56 determines the memory location in the memory 38 of the registers the PLC 32. At an end of scan interrupt, the back plane driver 56 processes the read/write register requests by sending commands via the dual port memory 38 to the PLC 32 to read or write the locations containing the registers. The back plane driver 56 will service a maximum of four read/write register requests at the end of a scan interrupt.

The cited section of Papadopoulos describes ways in which data is accessed by the Web server from the "PLC registers 32" and "dual memory 38." Moreover, Table 1 of Papadopoulos purportedly identifies "the different request types that allow a user to acquire a snapshot of the PLC 32 and the dual memory 38" such as a "display of the PLC configuration, remote and distributed I/O and module health statistics, display registers, back plane configuration, Ethernet statistics and others as shown in Table 1." (See Papadopoulos at Col. 8, lines 38–44.) A careful



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review of the cited sections of Papadopoulos and the reference taken as a whole fails to reveal anything in the way of a table having "a mapping of a text tag to said memory register" and "receiving a selection of said tag and a request that said tag be displayed in said table," as recited in Claim 27. Appellants note that Papadopoulos mentions the use of tables and that data structures formatted as a table are generally known in the art. However, Claim 27 recites a method in which a memory location within the control system and a Web server data item is associated in "a mapping of a text tag to said memory register." As the specification of the present application indicates, this mapping provides a correlation which allows data retrieved from the control system to be evaluated appropriately and placed in the local RAM. (See present application at page 19.) Moreover, by defining a mapping of text tags to memory registers in this way, "the information required for data access table renderings may be defined completely for each column header and data content, and reused for multiple data tables." (See present application at page 18.) Accordingly, Claim 27 recites elements which provide a more extensible Web server module in which code and data are capable of being reused. As a result, the Web server module may be more readily configured and/or adapted to operate in conjunction with different types of control systems. In contrast, the cited sections of Papadopoulos clearly indicate that a "request for accessing the PLC's 32 registers is processed by the back plane driver 56, and is not sent to the PLC's executive program for processing." (See Papadopoulos at Col. 6, lines 35–38.) In this regard, "after parsing the request, it calls the operating system 44 to process the request." (See Papadopoulos at Col. 8, lines 34–35.) Then, to perform reads of PLC register data, "the operating system 44 sends a request to the back plane driver . . . ." (See Papadopoulos at Col. 9, lines 21–24.) Accordingly, Papadopoulos does not define "a mapping of a text tag to said memory register and by receiving a selection of said tag and a request that said tag be displayed in said table." Instead, the reference relies on a real time operating system and



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backplane driver to access data from the PLC. Papadopoulos simply does not disclose mapping a text tag to memory registers that promotes code reuse and provides a more extensible Web server module as recited in Claim 27. Accordingly, appellants submit that the Board should overturn the 35 U.S.C. § 103(a) rejection of Claim 27

3. Dependent Claims 2–9, 12–15, 17, 18, 28, 31, and 33–37

Claims 2–9, 12–15, 17, and 18 depend on independent Claim 1, and Claims 28, 31, and 33–37 depend on independent Claim 27. As discussed above, independent Claims 1 and 27 are non-obvious in view of Papadopoulos and Haverstock. Accordingly, for the above-mentioned reasons, Claims 2–9, 12–15, 17, 18, 28, 31, and 33–37 are also non-obvious in view of the cited references. Accordingly, appellants respectfully request that the rejection with regard to Claims 2–9, 12–15, 17, 18, 28, 31, and 33–37 be overruled. Additionally, these claims are non-obvious in view of the cited references for additional reasons, which are discussed in further detail below.

With regard to Claim 5, this claim includes the additional recitation of "wherein said non-markup language Web site database further comprises data defining a Web page comprising a table for reading or writing the contents of a memory register contained within said control system." The Office Action alleges that Papadopoulos teaches this claim element, and cites Papadopoulos at Col. 5, lines 20–29, in support of this proposition. See Office Action at page 5. The cited sections of Papadopoulos state the following:

> The TCP/IP network 42 allows special MSTR (master) functions that allow nodes on the network to initiate message transactions. These MSTR functions include reading and writing data and are used for commands and responses. They allow programs running in the PLC 32 to send commands to a remote node on the TCP/IP network 42 and receive the responses A back plane driver 56 sends commands and receives the response to the PLC 32 over the back plane 34.

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The cited sections of Papadopoulos disclose functions which allow programs running on a PLC to send commands to a remote node on the network. Appellants respectfully submit that this messaging system as disclosed in Papadopoulos is not equivalent to "a table for reading or writing the contents of a memory register contained within said control system." Accordingly, for these additional reasons, appellants request that the rejection of Claim 5 be overturned.

Claim 15 includes the additional recitation of "wherein said Web server module further comprises an Ethernet interface for receiving said non-markup language Web site database and said requests and wherein said dynamically generated markup language Web page may comprise a Web page providing information regarding the status of said Ethernet interface." The Office Action asserts that Papadopoulos teaches the aforementioned recitations in Claim 15, and cites Papadopoulos at Col. 4, lines 55–58, in support of that proposition. The cited section of Papadopoulos indicates that the reference uses an Ethernet driver and an Ethernet communication chip to perform IP based communications over the network. However, appellants are unable to find any reference in Papadopoulos to providing information to a user "regarding the status of said Ethernet interface." Accordingly, for these additional reasons, appellants submit that the rejection of Claim 15 be overruled.

Claim 17 includes the additional recitation of "wherein said dynamically generated markup language Web page comprises a Web page providing system administrator or specific user-allowed access that allows active browser session modification of said security profile privileges." The Office Action alleges that Papadopoulos teaches the aforementioned claim element and cites the reference at Col. 4, lines 1–21 in support of this proposition. The cited sections of Papadopoulos indicate that a "firewall or security for the overall system can be included in the web server 30, but is generally maintained as part of the network interface 16." See Papadopoulos at Col. 4, lines 12–15. However, the cited section of Papadopoulos and the

reference taken as a whole does not describe or disclose any active browser sessions. Those skilled in the art and others will recognize that, by defining an active browser session, additional security over normal Web communications is provided. Appellants are unable to find any indication in Papadopoulos that the reference discloses the establishment of an active browser session, let alone an active browser session in which the security attributes of the Web server are changed, as recited in Claim 17. Accordingly, for these additional reasons, appellants respectfully request that the rejection of Claim 17 be overruled.

Ground 2: Whether Claims 10, 11, and 16 are obvious under 35 U.S.C. § 103(a) in view of Papadopoulos, Haverstock, and Sharood.

Claims 10, 11, and 16 depend on independent Claim 1. As discussed above, independent Claim 1 is non-obvious in view of Papadopoulos and Haverstock. Accordingly, for the above-mentioned reasons, Claims 10, 11, and 16 are also non-obvious in view of the cited references, and appellants request that the rejection with regard to Claims 10, 11, and 16 be overruled.

Ground 3: Claims 1–9, 12–15, 17, 18, 27, 28, 31, and 33–37 satisfy the requirements of 35 U.S.C. § 112.

The Office Action rejected Claims 1–9, 12–15, 17, 18, 27, 28, 31, and 33–37 under 35 U.S.C. § 112, first paragraph, as allegedly failing to comply with the written description requirement. Appellants respectfully submit that each of the claims rejected in the Office Action is supported by the specification.

Appellants note that there is no *in haec verba* requirement, and that claim limitations can be supported in the specification through express, implicit, or inherent disclosure. M.P.E.P.



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§ 2163(I)(B), p. 2100–175, Rev. 6, September 2007. In this regard, the fundamental factual inquiry is whether the specification conveys with reasonable clarity to those skilled in the art that, as of the filing date sought, applicants were in possession of the invention as now claimed. *Vas-Cath, Inc. v. Mahurkar*, 935 F.2d 1555, 1563–64, 19 U.S.P.Q.2d 1111, 1117 (Fed. Cir. 1991); M.P.E.P. § 2163(I)(B), p. 2100-176.

Part of the analysis of whether the specification complies with the written description requirement calls for a comparison between the scope of the claim with the scope of the description to determine whether applicants have demonstrated possession of the claimed invention. Such a review is conducted from the standpoint of one of skilled in the art at the time the application was filed and should include a determination of the field of the invention and the level of skill and knowledge in the art. Generally, there is an inverse correlation between the level of skill and knowledge in the art and the specificity of disclosure necessary to satisfy the written description requirement. Information which is well known in the art need not be described in detail in the specification. M.P.E.P. § 2163(II)(A)(2), p. 2100–177 to 2100–178.

The Office Action asserts that the claim element of "without said data related to said markup language Web page persisting on said Web server module is not found in the specification." See Office Action at page 2. Appellants respectfully disagree and submit that this feature is supported in the Specification by at least the description provided at page 9, lines 23–25; page 12, lines 18–29; page 15, lines 11–18; page 16, lines 3–17; page 19, lines 13–30; page 23, lines 12–22; page 24, line 22 to page 25, line 20; page 30, lines 1–7; and page 32, lines 5–15.

In addition, the Office Action asserts that insufficient antecedent basis exists for certain limitations in Claim 1 relating to the use of the terms "said web site page" and "said web site web page." Appellants agree that these terms are used imprecisely. However, the fact that claim



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language may not be precise does not automatically render the claim indefinite under 35 U.S.C. § 112, second paragraph. See *Seattle Box Co., v. Industrial Crating & Packing, Inc.*, 731 F.2d 818, 221 U.S.P.Q. 568 (Fed. Cir. 1984). Acceptability of the claim language depends on whether one of ordinary skill in the art would understand what is claimed, in light of the specification. If the scope of a claim would be reasonably ascertainable by those skilled in the art, then the claim is not indefinite. See *Energizer Holdings Inc. v. Int'l Trade Comm'n*, 435 F.3d 1366, 77 U.S.P.Q.2d 1625 (Fed. Cir. 2006) (holding that "anode gel" provided by implication the antecedent basis for "zinc anode"); *Ex parte Porter*, 25 U.S.P.Q.2d 1144, 1145 (Bd. Pat. App. & Inter. 1992) ("controlled stream of fluid" provided reasonable antecedent basis for "the controlled fluid"). Appellants submit that the elements asserted in the Office Action as being indefinite are reasonably ascertainable by those skilled in the art and others.



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## VIII. CLAIMS APPENDIX

1. A system for providing information regarding the operation of a control system, comprising:

a Web server module associated with said control system, said Web server module having a memory operative to store a non-markup language Web site database that may be used to dynamically generate a markup language Web page in response to a request, wherein said Web site page is populated by the Web server module with information obtained directly from memory registers of the control system in response to the request;

a remote computer operative to receive user-defined non-markup language configuration data defining attributes of said Web site, to store said configuration data as said non-markup language Web site database, to transmit said non-markup language Web site database to said Web server module, and to request and receive said markup language Web page from said Web server module;

a Web server module configuration application associated with the remote computer operative to create said non-markup language Web site database from information obtained locally at the remote computer and to transmit said database to said Web server module in response to the request; and

wherein the Web server module is further configured to receive the non-markup language database from the remote computer in a request and to dynamically generate a markup language Web page that includes information obtained directly from memory registers of the control system in response to said request without data related to said markup language Web page persisting on said Web server module.

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2. The system of Claim 1, wherein said Web server module is further operative to identify a user associated with said request and to determine if said user is authorized to receive said Web page based on received privilege information.

3. The system of Claim 1, wherein said Web server module is operative to transmit said dynamically generated markup language Web page to the remote computer making said request.

4. The system of Claim 3, wherein said non-markup language Web site database further comprises a security profile map defining security level and privilege information for one or more users, and wherein said Web server module is further operative to identify a user associated with said request and to determine if said user is authorized to receive said Web page based upon an entry in said security profile map associated with said user.

5. The system of Claim 1, wherein said non-markup language Web site database further comprises data defining a Web page comprising a table for reading or writing the contents of a memory register contained within said control system.

6. The system of Claim 1, wherein said non-markup language Web site database further comprises data defining a Web page comprising a non-text rendering of read or write data corresponding to contents of a memory register contained within said control system.

7. The system of Claim 5, wherein said request comprises a request for said Web page comprising a table, and wherein said Web server module is operative to identify said memory register, to determine the contents of said memory register, and to create said Web page comprising a table containing said contents of said memory register.



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8. The system of Claim 6, wherein said request comprises a request for said Web page comprising a non-text rendering, and wherein said Web server module is operative to identify said memory register, to determine the contents of said memory register, and to create said Web page comprising a non-text rendering based upon said contents of said memory register.

9. The system of Claim 3, wherein said Web server module is electrically connected to said control system controller through a backplane interface.

10. The system of Claim 3, wherein said Web server module is electrically connected to said control system controller through a serial interface.

11. The system of Claim 3, wherein said Web server module is electrically connected to said control system controller through a network interface.

12. The system of Claim 3, wherein said request comprises a hyper-text transport protocol request and wherein said request is received from a Web browser executing on said remote computer.

13. The system of Claim 1, wherein said dynamically generated markup language Web page comprises a Web page identifying an alarm generated by said Web server module through the monitoring of data for said control system.

14. The system of Claim 1, wherein said dynamically generated markup language Web page comprises a Web page identifying an event generated by said Web server module through the monitoring of data for said control system.

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15. The system of Claim 1, wherein said Web server module further comprises an Ethernet interface for receiving said non-markup language Web site database and said requests and wherein said dynamically generated markup language Web page may comprise a Web page providing information regarding the status of said Ethernet interface.

16. The system of Claim 1, wherein said Web server module further comprises a serial port interface and wherein said dynamically generated markup language Web page may comprise a Web page providing information regarding said serial port interface.

17. The system of Claim 1, wherein said dynamically generated markup language Web page comprises a Web page providing system administrator or specific user-allowed access that allows active browser session modification of said security profile privileges.

18. The system of Claim 1, wherein said Web server module is further operative to receive a plurality of said requests and wherein said dynamically generated markup language Web page may comprise a Web page identifying a like plurality of users connected to said Web server module and associated with said plurality of requests.

19–26. (Canceled)

27. A method for providing information regarding the operation of a control system, comprising:

receiving user-defined non-markup language configuration data defining attributes of a Web site wherein the Web site corresponds to aspects of a programmable logic controller defined by a user wherein said configuration data defines a table with entries corresponding to the contents of read or write memory registers contained within said control system, wherein said



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data defining said table is created by receiving a mapping of a text tag to said memory register and by receiving a selection of said tag and a request that said tag be displayed in said table;

storing said configuration data as a non-markup language Web site database; and

in response to a request, dynamically generating a Web page defined by the non-markup language configuration data stored as a non-markup language Web site database that provides information regarding the operation of a control system, wherein said markup language Web page is generated dynamically without persisting on a Web server.

28. The method of Claim 27, further comprising transmitting said non-markup language Web site database to a Web server module associated with said control system, wherein said Web server module is operative to receive requests for said Web site and to generate markup language Web pages from said non-markup language Web site database in response to said requests.

29–30. (Canceled)

31. The method of Claim 27, wherein said data defining said non-text rendering is created by receiving a mapping of a tag to said memory register and a request that said tag be displayed via said non-text rendering.

32. (Canceled)

33. The method of Claim 27, wherein said configuration data comprises an internet protocol address for said Web server module.



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34. The method of Claim 27, wherein receiving non-markup language configuration data defining a Web site comprises receiving the selection of one or more of a plurality of defined Web pages.

35. The method of Claim 27, wherein said plurality of defined Web pages comprises a security page, an alarm Web page, an event Web page, an Ethernet Web page, a serial port Web page, a menu Web page, a data access Web page, a page identifying online users, or a systems administrator page.

36. A computer-readable medium comprising instructions which, when executed by a computer, cause the computer to perform the method of any one of Claims 27–28, 31, and 33–35.

37. A computer-controlled apparatus capable of performing the method of any one of Claims 27–28, 31, and 33–35.

38–49. (Canceled)



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## IX. EVIDENCE APPENDIX

None



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## X. RELATED PROCEEDINGS APPENDIX

None

Respectfully submitted,

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